

ABSTRACT OF THE INVENTION

A method of fabricating a flash memory integrated circuit is described. In an embodiment of the present invention a dielectric filled trench isolation region is formed in a silicon substrate. The dielectric filled trench isolation region isolates a first portion of the silicon substrate from a second portion of the silicon substrate. A portion of the dielectric in the trench is then removed to reveal a portion of the silicon substrate in the trench between the first and second portions of the silicon substrate. Ions are then implanted to form a first source region in the first portion of the silicon substrate and to form a second source region in the second portion of the silicon substrate and to form a doped region in the revealed silicon substrate in the trench wherein the doped region in the trench extends from the first doped source region to the second doped source region.

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